

Appendix A

Other Issues

Issues not analyzed in detail are discussed with rationale for dismissal in the following sections. Additional information defining these and other preliminary issues and a general resolution and analysis strategy are displayed in the Issue Disposition Matrix located in the Project File.

A. Upland Vegetation (Including Invasive Species)

Affected Environment

Fridley Creek Allotment

The dominant rangeland habitat on this allotment is Douglas-fir/snowberry. This habitat type was only found in primary range and it covers 1,820 acres of the allotment. The next dominant habitat type was big sagebrush/Idaho fescue and it covered 926 acres of the allotment. The Idaho fescue/timothy habitat type was also found in primary range, (see Table A-1). This totals 3,139 acres of primary range, 1,247 acres of secondary range, 874 acres of transitory primary range and no transitory secondary range. According to the files, utilization within the allotment in 2003 was approximately 35 percent on the uplands and 80-90 percent on riparian areas. Most of the utilization transects were taken in primary rangelands. According to the utilization monitoring, grazing use was not uniform, there was more concentration in the riparian areas. The upland vegetation is in good condition, however, the riparian areas are in poor to fair condition. The dominant weeds presently found on the allotment are Canada and musk thistle, black henbane, mullein, and spotted knapweed.

The Forest Service has a water tank in section 34 T5S, R7E that is maintained by the permittee. There are several boundary fences that are maintained by the private landowners that are adjacent to the allotment.

Table A-1 – Habitat and Suitability by Acres for Fridley Creek Allotment

Primary Range	Acres
FESIDA/AGRSPI	193
FESIDA/PHLPRA	200
ARTTRI/FESIDA	926
PSEMEN/SYMALB	1820
Total Primary Acres	3139
Secondary Range	Acres
FESIDA/AGRSPI	52
ARTTRI/FESIDA	609
PSEMEN/SYMALB	426
PINCON/CALRUB	160
Total Secondary Acres	1247
Transitory Primary Range	Acres
PINCON/CALRUB	749
CALRUB/SYMALB	125
Total Transitory Range	874

Lewis Creek Allotment

The dominant rangeland habitat on this allotment is Douglas-fir/snowberry. This habitat type was only found in primary range and it covers 270 acres of the allotment. The next dominant habitat type was big sagebrush/Idaho fescue and it covered 220 acres of the allotment, and was also found in primary range, (see Table A-2). This totals 490 acres of primary range, 180 acres of secondary range, 125 acres of transitory primary range and no transitory secondary range. According to the files, utilization within this allotment was approximately 75 to 80 percent in the upland areas in 1997. From 2003 to 2005, there has been no grazing within the allotment from cattle. There are no records of utilization in the riparian areas. Both the upland and riparian areas are classified in good condition with an upward trend. The dominant weeds presently found on the allotment are hounds tongue and Canada thistle.

There are two water tank developments in section 12 T6S, R6E that is to be maintained by the permittee and several boundary fences that are maintained by the private landowners that are adjacent to the allotment.

Table A-2 – Habitat and Suitability by Acres for Lewis Creek Allotment

Primary Range	Acres
ARTTRI/FESIDA	220
PSEMEN/SYMALB	270
Total Primary Acres	490
Secondary Range	Acres
PSEMEN/SYMALB	140
PSEMEN/AGRSPI	40
Total Secondary Acres	180
Transitory Range	Acres
PINCON/PHLPRA	60
PINCON/CALRUB	65
Total Transitory Range	125
Primary Range	Acres
ARTTRI/FESIDA	220
PSEMEN/SYMALB	270
Total Primary Acres	490

Sunnybrook Allotment

The dominant rangeland habitat on this allotment is big sagebrush/ Idaho fescue. This habitat type was only found in primary range and it covers 277 acres of the allotment (see Table A-3). This totals 357 acres of primary range, no secondary range, no transitory primary range and no transitory secondary range. There are no records in the files for utilization. The dominant weeds presently found on the allotment are hounds tongue and Canada thistle.

The only existing range improvements on the allotment is a drift fence that was built in 1994 and added to in 1996. There are several boundary fences that are maintained by the private landowners that are adjacent to the allotment.

Table A-3 – Habitat and Suitability by Acres for Sunnybrook Allotment

Primary Range	Acres
ARTTRI/FESIDA	37-FS, 240-Pvt
PSEMEN/ARTTRI	40 – FS
PSEMEN/SYMALB	40 – Pvt
Total Primary Acres	356

Dry Creek Allotment

The dominant rangeland habitat on this allotment is Douglas-fir/snowberry. This habitat type was only found in primary range and it covers 782 acres of the allotment (see Table A-4). This totals 842 acres of primary range, 291 acres of secondary range, 185 acres of transitory primary range and no transitory secondary range. Since this currently is not an allotment, there are no records for utilization. The dominant weeds presently found on the allotment are St. Johnswort, hounds tongue and Canada thistle. There are currently no range improvements on this allotment.

Table A-4 – Habitat and Suitability by Acres for Dry Creek Allotment

Primary Range	Acres
PSEMEN/SYMALB	782
PINCON/PHLPRA	60
Total Primary Acres	842
Secondary Range	Acres
PSMEN/SYMALB	278
ARTTRI/FESIDA	13
Total Secondary Acres	291
<i>Transitory Primary Range</i>	Acres
<i>PSEMEN/SYMALB</i>	185
Total Transitory Range	185
Primary Range	Acres
PSEMEN/SYMALB	782
PINCON/PHLPRA	60
Total Primary Acres	842

General Effects

Alternative One – No Action/No Grazing

Fridley/Lewis/Sunnybrook Allotments

This alternative would provide for an overall increase in vegetation biomass. This recovery would probably be dramatic initially as would the increase in plant density. Within the allotments as a whole and over a long period of time, plant communities may have a more favorable composition of native species. This is possibly a result of plant species that increase in density from repeated grazing no longer receiving that annual stimulus. Vigor and individual plant production may increase in the short term with no cattle grazing. Eliminating grazing impacts on transitory range will reduce trailing and allow vegetation to reestablish along roadways. Noxious weeds will continue to be present in various areas. Soil disturbance from cattle would not be

present; therefore susceptibility to invasion by certain weed species may be less. Reduction of noxious weeds through treatment, on national forest, would continue as sites are identified and as funding allows. Without grazing, the threat for fire to be ignited and/or carried in suitable range types (grassy areas) is slightly higher. Fine fuels build up over a year or two, but then the natural process of decomposition set in; leveling off the increased ignition probability.

The no action alternative would at least partially resolve the key issues related to livestock effects on streams, aspen regeneration, and spring integrity. However, this will not eliminate these effects from livestock grazing on private land. If this alternative were, selected, the permittee would likely fence the Forest Service boundary and continue to graze.

The activities that could present cumulative effects for upland vegetation include private land management and wildfire. Activities on private land that could have cumulative effects associated with livestock grazing are those that increase the risk of weed establishment. If weeds become established on private lands during future land management, grazing, etc., they may spread onto the allotment and have cumulative impacts on native vegetation

It is anticipated that one outcome of implementing the No Action Alternative could involve fencing private land boundaries, at least where there is primary range. This could result in even more impact to streams and riparian areas located on private land.

Wildfire could cumulatively impact upland vegetation on the allotment. Without grazing, on the National Forest lands, the threat for fire to be ignited and/or carried in suitable range types (grassy areas) is slightly higher. Fine fuels build up over a year or two, but then natural processes of decomposition set in, leveling off the increased ignition probability. After severe fire, BAER teams are often used to determine what actions are needed to help vegetation recovery.

Alternative 2 – Current Management – Proposed Action

Fridley Creek Allotment

Under this alternative, permitted livestock grazing would continue under the same management systems. A downward trend in the upland vegetation is expected with this alternative. Season long grazing does not allow plants a chance to rotate through various phenological stages. This could reduce plant vigor or prevent reproduction leading to a reduction in community diversity allowing for non-desirable species to become established. Season long use leads to moderate to heavy use every year, especially in riparian areas. Impacts to vegetation from cattle would be within Forest Plan standards and guidelines. Noxious weeds would continue to be present in various areas. Soil disturbance from cattle can make certain areas susceptible to invasion by certain species. As new sites are identified, reduction of noxious weeds through treatment, on National forest, would continue.

The activities that could present cumulative effects for upland vegetation include past timber harvest, private land management, and wildfire. In 2001, the Fridley Fire burned through parts of this allotment. The lack of vegetation after the fire allowed for downcutting of some streams and riparian areas. Certain areas show impact from the fire and livestock grazing, particularly in the Miller Creek drainage. Another wildfire in combination with livestock grazing could cumulatively impact upland vegetation on the allotment. Livestock would not be allowed onto an allotment for several years (depending on the intensity of the burn) after the burn to allow vegetation to recover. However, in areas where vegetation may have already been compromised by livestock grazing, fire could impact the vegetation further. Mitigation measures such as long-term livestock removal, or re-planting might be necessary. After severe fire, BAER teams are often used to determine what actions are needed to help vegetation recovery.

Indirect effects would include changes in light and moisture regimes if the tree canopy is removed, increasing open areas where cattle may congregate (where they didn't before), and the introduction of weeds. Generally, vegetation in this allotment where past logging has taken place is in good condition, however, there are a few places that show impact from past logging and cattle grazing. These are areas where roads follow the creek corridors, particularly in Miller Creek.

Activities on private land that could have cumulative effects associated with livestock grazing are those that increase the risk of weed establishment. If weeds become established on private lands during any future land management, grazing, etc., they could spread onto the allotment and have cumulative impacts on native vegetation if livestock spread them further. Cumulative effects would impact this allotment similarly for any action alternative.

Lewis Creek Allotment

With this alternative, grazing would be reauthorized through the process identified in Forest Service Handbook (FSH 2209.13, Ch. 90). This alternative would increase the plant vigor, resulting in an upward trend for the upland vegetation since the plant community has not been grazed for three years. This allotment would be grazed in a two-pasture deferred rotation, and would result in light grazing on the upland plant community. Impacts to vegetation from cattle would be within Forest Plan standards and guidelines. Timing, duration and intensity of grazing would be controlled. Plant vigor and litter should increase under this management. Species composition in plant communities in this allotment would remain very similar to existing vegetation into the foreseeable future and any change would be slower than either of the other alternatives. Management, particularly movement of cattle from one pasture to the other, would continue to be challenging due to topographic and natural barriers found within the current allotment boundaries.

The 2003 Decision Memo for the Paradise Valley Fuels Management and Prescribed Burning Project allows for slashing and prescribed burning in Section 12 of this allotment. This project will help to increase the vigor of the grass and shrub

communities; the reestablishment of productive native grass and shrub species; reduce the amount of trees currently encroaching on the suitable range meadows; and reduce the natural fuel loading. Noxious weeds are not expected to increase but rather the potential for their development should slightly decrease. Low-intensity burns that are being considered with this proposal will not create ground conditions that are more susceptible to noxious weed infestations.

Noxious weeds would continue to be present in various areas. Soil disturbance from cattle can make certain areas susceptible to invasion by certain species. As new sites are identified, reduction of noxious weeds through treatment would continue.

The activities that could present cumulative effects for upland vegetation include past timber harvest, and trail use. Vegetation in this allotment where logging has taken place is currently in good condition. Activities associated with trail use could have minimal cumulative effects associated with the spread of noxious weeds. Cumulative effects would impact this allotment similarly for any action alternative.

Sunnybrook Allotment

Under this alternative, permitted livestock grazing would continue under the same management system. All impacts from grazing will be within Forest Plan standards and guidelines. Timing, duration and intensity of grazing would be controlled. Species composition in plant communities in this allotment would remain very similar to existing vegetation. This allotment would be grazed in conjunction with an NRCS grazing plan.

Noxious weeds would continue to be present in various areas. Soil disturbance from cattle can make certain areas susceptible to invasion by certain species. As new sites are identified, reduction of noxious weeds through treatment, on National forest, would continue.

Activities on private land that could have cumulative effects associated with livestock grazing are those that increase the risk of weed establishment. If weeds become established on private lands during trail rides, hiking and grazing, they could spread onto the allotment and have minimal cumulative effects on native vegetation. Cumulative effects would impact this allotment similarly for any action alternative.

Dry Creek Allotment

Under this alternative, Dry Creek Allotment would not exist.

Alternative 3 – Adaptive Management – Preferred Alternative

Fridley Creek Allotment

Impacts to vegetation from cattle would be less than in past years. Alternative 3 would implement adaptive management. Adaptive management is the process of

utilizing monitoring data to determine if management changes are needed to improve resource conditions within allotments, and if so, what changes, and to what degree. This system would control the timing, duration and intensity of grazing. Implementation of this alternative would allow cattle to graze using a deferred grazing rotation system. Vegetation biomass would be removed early in one pasture and deferred until late the next season. Plant litter, production and vigor should increase under this management strategy. Impacts to vegetation from cattle grazing would decrease from past permitted levels, and would be within Forest Plan standards and guidelines. The reduction in livestock impacts (grazing and trampling) would have a long-term positive effect on vegetation composition along stream reaches accessible to cattle. This alternative limits grazing in the Fridley Creek Allotment according to the Range Forest Service Handbook (FSH 2209, pg.634-2) sets upland utilization at:

Table A-5 Upland Utilization for Fridley Creek Allotment

	Dry Range	Moist Range
Early Pasture	55%	65%
Late Pasture	35%	45%

These utilization standards would be used as a monitoring tool to be measured periodically to determine management effectiveness.

This alternative would also provide several ways to increase aspen regeneration within the upland aspen stand in the Fridley Allotment, including felling of conifers, mechanical disturbance of the root system, and/or controlled burning within the immediate area of the aspen stand. Controlled burning, if warranted within the treatment area, would require reducing or eliminating grazing in the treatment area for the year prior to burning to ensure there would be sufficient fine fuels to help carry the fire and partial rest or deferment up to one year after the burning treatment to help ensure that the grass and forb species have a chance to become established and increase vigor. However, these rest periods could result in some minor short-term economic impacts to the permittee as they would have to find other sources of feed for their livestock during these times.

Noxious weeds would continue to be present in various areas. Adaptive Management strategies should reduce soil disturbance from cattle, making the allotment less susceptible to the invasion of noxious weeds on National Forest and areas nearby, but not yet on the allotment. The majority of noxious weeds are in the Miller Creek drainage due to the amount of logging, Fridley Fire, livestock grazing and wildlife. Canada thistle, musk thistle, black henbane, mullein and spotted knapweed are the dominant species, although a variety of other species are present. Any cumulative effects regarding upland vegetation would be similar to those associated with Alternative 2.

Lewis Creek Allotment

Under this alternative, one pasture would be removed and added to another allotment. This allotment would be used in conjunction with an NRCS grazing plan that directs management on adjacent private land.. The impacts under this alternative would be similar to Alternative 2 (Proposed Action) with the exception to adding the Adaptive Management strategies. Impacts to vegetation from cattle would decrease from past permitted levels, and all impacts would be within Forest Plan standards and guidelines. Timing, duration and intensity of grazing will be controlled. Plant vigor and litter should increase under this management. Species composition in plant communities in this allotment would remain very similar to existing vegetation. The Range Forest Service Handbook (FSH 2209, pg.634-2) sets upland utilization at:

Table A-6 Upland Utilization for Lewis Creek Allotment

	Dry Range	Moist Range
Early Pasture	55%	65%
Late Pasture	35%	45%

These utilization standards would be used as a monitoring tool to be measured periodically to determine management effectiveness.

The 2003 Decision Memo for the Paradise Valley Fuels Management and Prescribed Burning Project allows for slashing and prescribed burning in section 12 of this allotment. This project will help to increase the vigor of the grass and shrub communities; the reestablishment of productive native grass and shrub species; reduce the amount of trees currently encroaching on the suitable range meadows; and reduce the natural fuel loading. Noxious weeds are not expected to increase but rather the potential for their development should slightly decrease. Low-intensity burns that are being considered with this proposal will not create ground conditions that are more susceptible to noxious weed infestations.

Noxious weeds would continue to be present in various areas. Adaptive Management strategies should reduce soil disturbance from cattle, making the allotment less susceptible to the invasion of noxious weeds on National Forest and areas nearby, but not yet on the allotment. Very few noxious weeds inhabit this area due to very few roads, the lack of access to the public and the vacancy of this allotment for the past three years. However, the noxious weeds would continue to be monitored and eradicated when possible. Any Cumulative effects regarding upland vegetation would be similar to those associated with Alternative 2.

Sunnybrook Allotment

The impacts under this alternative would be similar to Alternative 2 (Proposed Action) with the exception to adding the Adaptive Management strategies. Adaptive Management is the process of utilizing monitoring data to determine if management changes are needed to improve resource conditions within allotments, and if so, what changes, and to what degree. Under this alternative, permitted livestock grazing would continue under the same management system. All impacts from grazing would be within Forest Plan standards and guidelines. Timing, duration and intensity of grazing would be controlled. Species composition in plant communities in this allotment would remain very similar to existing vegetation. This allotment would be grazed in conjunction with an NRCS grazing plan. The Range Forest Service Handbook (FSH 2209, pg.634-2) sets upland utilization at:

Table A-7 Upland Utilization for Sunnybrook Allotment

	Dry Range	Moist Range
Early Pasture	55%	65%
Late Pasture	35%	45%

These utilization standards would be used as a monitoring tool to be measured periodically to determine management effectiveness.

Noxious weeds would continue to be present in various areas. Adaptive Management strategies should reduce soil disturbance from cattle, making the allotment less susceptible to the invasion of noxious weeds on National Forest and areas nearby, but not yet on the allotment. Any Cumulative effects regarding upland vegetation would be similar to those associated with Alternative 2.

Dry Creek Allotment

As a part of Alternative 3 (Adaptive Management), a fourth allotment would be created. The new Dry Creek Allotment would incorporate section 4 T6S, R7E and section 32 T5S, R7E of the Fridley Creek Allotment, section 6 T6S, R7E of the Lewis Creek Allotment and parts of section 5 T6S, R7E, which is privately owned land (see Map 7). The Forest Service would manage the entire allotment. This would eliminate any trespass issues, allow for an overall increase in vegetative biomass, and make the area more manageable due to the geographic restrictions. Impacts from grazing will be within Forest Plan standards and guidelines. The Range Forest Service Handbook (FSH 2209, pg.634-2) sets upland utilization at:

Table A-8 Upland Utilization for Dry Creek Allotment

	Dry Range	Moist Range
Early Pasture	55%	65%
Late Pasture	35%	45%

These utilization standards would be used as a monitoring tool to be measured periodically to determine management effectiveness.

Noxious weeds would continue to be present in various areas. Adaptive Management strategies should reduce soil disturbance from cattle, making the allotment less susceptible to the invasion of noxious weeds on National Forest and areas nearby, but not yet on the allotment. Any cumulative effects regarding upland vegetation would be similar to those associated with Alternative 2.

B. Soils

Affected Environment

Fridley Creek Allotment

The analyzed area is about 7,000 acres. This varies from the total allotment area of 10, 278 acres because the soil survey included some, but not all private lands, and from variations in measurement methods. The entire area has formed in material weathered or eroded from dark-colored volcanic rocks. It has 141 acres (2%) of alluvial bottom land (both wet and dry.) Grasslands (steep and rolling) make up 52% of the area. Most of this grassland is in Douglas Fir/grassland transitional vegetation types. However, 93% of the grassland occurs on > 40% slope.

Steep rocky ground is 27%. Forested land makes up the remainder (21%.) Soils are primarily medium textured with low erosion and compaction potential. Twenty percent of the area is underlain by soils having moderately fine texture with significant compaction potential if trampled when wet. However, none of these soils are in grassland areas, with the exception of 121 acres of alluvial bottom in Douglas fir/grassland transitional vegetation.

Productivity: Grassland and transitional Douglas fir/grassland areas have a moderate forage productivity (estimated at 700 lbs/ac/year.) They appear suitable for grazing. Production could be increased by removing some Douglas fir encroachment with fire or hand/slashing..

Soil erosion and compaction: This allotment has little potential for soil erosion and compaction. Soils are not highly claylike in grassland areas, and few wet areas occur outside of riparian zones. Cattle should be restricted from accessing flat areas near Miller Creek and the southeast corner of Section 24 until soils are dry (generally after June 15.)

Lewis Creek Allotment

The analysis area for soils was about 683 acres in size. The entire area has formed in material weathered or eroded from dark-colored volcanic rocks. It is 70% grassland (steep and rolling.) Most of this grassland is in Douglas Fir/grassland transitional vegetation types. Steep rocky ground is less than 1% of the area. Forested land makes up the remainder (29%.)

Soils are primarily medium textured with many rock fragments and dark surface layers. Though 28% of the soils are moderately fine textured (with significant compaction potential if trampled when wet) none of these soils are in grassland areas.

Productivity: Grassland and transitional Douglas fir/grassland areas have a moderate forage productivity (estimated at 800 lbs/ac/year.) They appear suitable for grazing. Production could be increased by removing some Douglas fir encroachment with fire or hand/slashing.

Soil Erosion and Compaction: This allotment has little potential for soil erosion and compaction. Soils are not highly claylike in grassland areas, and few wet areas occur.

Sunnybrook Allotment

The analysis area for soils is about 574 acres in size. This varies from the total allotment area of 561 acres because of variations in measurement methods. The entire area has formed in material weathered or eroded from dark-colored volcanic rocks. It is 90% grassland (with 48% of that on less than 40% slopes.) Much of this grassland is in Douglas Fir/grassland transitional vegetation types. Fifty-six acres (10%) are alluvial bottoms with some wet areas.

Soils are primarily medium to moderately coarse textured with low erosion and compaction potential. Soils with moderately fine textures make up 18% of the grassland soils. These soils are sensitive to compaction and erosion if trampled when wet, as are part of the riparian area soil.

Productivity: Grassland and transitional Douglas fir/grassland areas have a moderate forage productivity (estimated at 600 lb/ac/year.) They appear suitable for grazing. Removing some Douglas fir encroachment with fire or hand/slashing could increase production.

Soil Erosion and Compaction: This allotment overall has little potential for soil erosion and compaction. Soils are generally not highly claylike in grassland areas, and few wet areas occur. However, some potentially compactable soils occur near streams and on 95 acres of Douglas fir/grassland transitional, rolling slopes south of Big Creek. Cattle should be restricted from these areas until soils are dry.

Proposed Dry Creek Allotment

The analyzed area is about 1,961 acres in size. This varies from the total allotment area of 1,895 acres because of variations in measurement methods. The entire area has formed in material weathered or eroded from dark-colored volcanic rocks. It is 82% grassland, with eight percent of that on less than 40% slopes. Almost all of the grassland area is in Douglas Fir/grassland transitional vegetation types. There are no large alluvial bottoms in this unit.

Soils are primarily medium to moderately coarse textured with low erosion and compaction potential.

Productivity: Grassland and transitional Douglas fir/grassland areas have a moderate forage productivity (estimated at 700 lb/ac/year.) They appear suitable for grazing. Removing some Douglas fir encroachment with fire or hand/slashing could increase production.

Soil Erosion and Compaction: This allotment overall has little potential for soil erosion and compaction. Soils are generally not highly claylike in grassland areas.

Table A-9 Fridley Creek Allotment Landtypes

SOIL	Acres	SOIL CHARA	ELU	ELU SOIL	DESCRIPTIO	SOILS
12-2A	77	Moderately fine texture	SAR	SARModerately fine texture	Subalpine fir/lodgepole pine, rolling	CONSOCIATION OF MOLLIC CRYOBORALFS, LOAMY SKELETAL, MIXED
12-2B	266	Moderately fine texture	WBPR	WBPRModerately fine texture	White bark pine, rolling	CONSOCIATION OF MOLLIC CRYOBORALFS, LOAMY SKETETAL, MIXED
53-3A	267	Medium texture	GRSR	GRSRMedium texture	Grassland, rolling	ASSOCIATION OF ARGIC CRYOBOROLLS, LOAMY SKELETAL, MIXED AND ARGIC PACHIC CRYOBOROLLS, LOAMY SKELETAL, MIXED
53-3B	161	Medium texture	DFR	DFRMedium texture	Douglas fir, rolling	ASSOCIATION OF MOLLIC CRYOBORALFS, FINE LOAMY, MIXED AND ARGIC CRYOBOROLLS FINE LOAMY, MIXED
54-3A	894	Medium texture	GRSS	GRSSMedium texture	Grassland, steep	COMPLEX OF TYPIC ARGIBOROLLS, LOAMY SKELETAL, MIXED; PACHIC ARGIBOROLLS, LOAMY SKELETAL, MIXED; AND ROCK OUTCROP
54-3C	2,320	Medium texture	DFTS	DFTSMedium texture	Douglas fir transitional to grassland, steep	COMPLEX OF TYPIC ARGIBOROLLS, LOAMY SKELETAL, MIXED; MOLLIC EUTROBORALFS, LOAMY SKELETAL, MIXED; AND ROCK OUTCROP
54-3D	893	Moderately fine texture	SAS	SASModerately fine texture	Subalpine fir/lodgepole pine, steep	CONSOCIATION OF MOLLIC CRYOBORALFS, FINE LOAMY, MIXED
54-3F	1,874	Medium texture, bedrock	BAS	BASMedium texture, bedrock	Rocky open slopes, steep	COMPLEX OF ROCK OUTCROP; ARGIC CRYOBOROLLS, LOAMY SKELETAL, MIXED; MOLLIC CRYOBORALFS, LOAMY SKELETAL, MIXED
64-2A	121	Medium to fine texture	DFTR	DFTRMedium to fine texture	Douglas fir transitional to grassland, rolling	UNDIFFERENTIATED GROUP OF CRYOBOROLLS
64-2C	20	Medium to fine texture	SAR	SARMedium to fine texture	Subalpine fir/lodgepole pine, rolling	UNDIFFERENTIATED GROUP OF CRYOBORALFS AND CRYOBOROLLS
Total	6,893					

Table A-10 Lewis Creek Allotment Landtypes

SOIL	Acres	SOIL_CHARA	ELU	ELU SOIL	DESCRIPTION	SOILS
22-3A	9	Medium texture	SAS	SASMedium texture	Subalpine fir/lodgepole pine, steep	COMPLEX OF TYPIC CRYOCHREPTS, LOAMY SKETETAL, MIXED AND ROCK OUTCROP
34-3B	50	Moderately fine texture	SAR	SARModerately fine texture	Subalpine fir/lodgepole pine, rolling	CONSOCIATION OF MOLLIC CRYOBORALFS, LOAMY SKELETAL MIXED
35-3B	47	Moderately fine texture	SAS	SASModerately fine texture	Subalpine fir/lodgepole pine, steep	CONSOCIATION OF MOLLIC CRYOBORALFS, LOAMY SKELETAL, MIXED
46-2A	12	Moderately coarse texture	GRSR	GRSRModerately coarse texture	Grassland, rolling	UNDIFFERENTIATED GROUP OF TYPIC ARGIBOROLLS, LOAMY SKELETAL, MIXED AND ARIDIC ARGIBOROLLS, LOAMY SKELETAL, MIXED
53-3A	30	Medium texture	GRSR	GRSRMedium texture	Grassland, rolling	ASSOCIATION OF ARGIC CRYOBOROLLS, LOAMY SKELETAL, MIXED AND ARGIC PACHIC CRYOBOROLLS, LOAMY SKELETAL, MIXED
54-3A	123	Medium texture	GRSS	GRSSMedium texture	Grassland, steep	COMPLEX OF TYPIC ARGIBOROLLS, LOAMY SKELETAL, MIXED; PACHIC ARGIBOROLLS, LOAMY SKELETAL, MIXED; AND ROCK OUTCROP
54-3C	315	Medium texture	DFTS	DFTSMedium texture	Douglas fir transitional to grassland, steep	COMPLEX OF TYPIC ARGIBOROLLS, LOAMY SKELETAL, MIXED; MOLLIC EUTROBORALFS, LOAMY SKELETAL, MIXED; AND ROCK OUTCROP
54-3D	91	Moderately fine texture	SAS	SASModerately fine texture	Subalpine fir/lodgepole pine, steep	CONSOCIATION OF MOLLIC CRYOBORALFS, FINE LOAMY, MIXED
54-3F	6	Medium texture, bedrock	BAS	BASMedium texture, bedrock	Rocky open slopes, steep	COMPLEX OF ROCK OUTCROP; ARGIC CRYOBOROLLS, LOAMY SKELETAL, MIXED; MOLLIC CRYOBORALFS, LOAMY SKELETAL, MIXED
Total	683					

Table A-11 Sunnybrook Allotment Landtypes

SOIL	Acres	SOIL_CHARA	ELU	ELU__SOIL	DESCRIPTION	SOILS
46-2A	172	Moderately coarse texture	GRSR	GRSRModerately coarse texture	Grassland, rolling	UNDIFFERENTIATED GROUP OF TYPIC ARGIBOROLLS, LOAMY SKELETAL, MIXED AND ARIDIC ARGIBOROLLS, LOAMY SKELETAL, MIXED
54-3A	76	Medium texture	GRSS	GRSSMedium texture	Grassland, steep	COMPLEX OF TYPIC ARGIBOROLLS, LOAMY SKELETAL, MIXED; PACHIC ARGIBOROLLS, LOAMY SKELETAL, MIXED; AND ROCK OUTCROP
54-3C	176	Medium texture	DFTS	DFTSMedium texture	Douglas fir transitional to grassland, steep	COMPLEX OF TYPIC ARGIBOROLLS, LOAMY SKELETAL, MIXED; MOLLIC EUTROBORALFS, LOAMY SKELETAL, MIXED; AND ROCK OUTCROP
64-2A	16	Medium to fine texture	DFTR	DFTRMedium to fine texture	Douglas fir transitional to grassland, rolling	UNDIFFERENTIATED GROUP OF CRYOBOROLLS
64-2C	40	Medium to fine texture	SAR	SARMedium to fine texture	Subalpine fir/lodgepole pine, rolling	UNDIFFERENTIATED GROUP OF CRYOBORALFS AND CRYOBOROLLS
71-2D	95	Moderately fine texture	DFTR	DFTRModerately fine texture	Douglas fir transitional to grassland, rolling	COMPLEX OF ARGIC CRYOBOROLLS AND MOLLIC CRYOBORALFS
Total	574					

Table A-12 Dry Creek Allotment Landtypes

SOILS	Acres	SOIL CHARA	ELU	ELU SOIL	DESCRIPTION	SOILS
22-3A	9.4	Medium texture	SAS	SASMedium texture	Subalpine fir/lodgepole pine, steep	COMPLEX OF TYPIC CRYOCHREPTS, LOAMY SKELETAL, MIXED AND ROCK OUTCROP
34-3B	145	Moderately fine texture	SAR	SARModerately fine texture	Subalpine fir/lodgepole pine, rolling	CONSOCIATION OF MOLLIC CRYOBORALFS, LOAMY SKELETAL MIXED
35-3A	35	Medium texture	WBPS	WBPSMedium texture	White bark pine, steep	COMPLEX OF MOLLIC CRYOBORALFS, LOAMY SKELETAL, MIXED AND ROCK OUTCROP
46-2A	12	Moderately coarse texture	GRSR	GRSRModerately coarse texture	Grassland, rolling	UNDIFFERENTIATED GROUP OF TYPIC ARGIBOROLLS, LOAMY SKELETAL, MIXED AND ARIDIC ARGIBOROLLS, LOAMY SKELETAL, MIXED
53-3A	157	Medium texture	GRSR	GRSRMedium texture	Grassland, rolling	ASSOCIATION OF ARGIC CRYOBOROLLS, LOAMY SKELETAL, MIXED AND ARGIC PACHIC CRYOBOROLLS, LOAMY SKELETAL, MIXED
53-3C	171	Moderately fine texture	SAR	SARModerately fine texture	Subalpine fir/lodgepole pine, rolling	CONSOCIATION OF MOLLIC CRYOBORALFS, FINE LOAMY, MIXED
54-3A	1.4	Medium texture	GRSS	GRSSMedium texture	Grassland, steep	COMPLEX OF TYPIC ARGIBOROLLS, LOAMY SKELETAL, MIXED; PACHIC ARGIBOROLLS, LOAMY SKELETAL, MIXED; AND ROCK OUTCROP
54-3C	1430	Medium texture	DFTS	DFTSMedium texture	Douglas fir transitional to grassland, steep	COMPLEX OF TYPIC ARGIBOROLLS, LOAMY SKELETAL, MIXED; MOLLIC EUTROBORALFS, LOAMY SKELETAL, MIXED; AND ROCK OUTCROP
Total	1960.8					

General Effects

All of the allotments described above contain soils with moderate productivity and appear suitable for grazing. All of the allotments have low potential for soil erosion and/or compaction in grazed areas. The aspen treatments associated with the Adaptive Management Alternative in the Fridley Creek Allotment aspen stand include the possible felling of conifers, mechanical disturbance of the root system, and/or controlled burning of the immediate aspen treatment area. These activities would only affect a small area, with any controlled burning being of low-intensity, and would cause no long-term effects to soil productivity. The controlled burning activities associated with the ongoing Paradise Acres Fuel Reduction Project would occur in portions of Section 12 of the Lewis Creek Allotment. This project would consist of slashing ladder fuels, accompanied by low-intensity underburning and would not affect long-term soil

productivity in the burned areas. There are no other planned future activities associated with any of the allotments or alternatives that are anticipated to have any significant effects on soils. For these reasons, soils issues are not considered to be of significant concern and none of the alternatives are likely to have cumulative effects regarding soils.

C. Management Indicator Species

Affected Environment

Management indicator species (MIS) are wildlife species whose habitat is most likely to be affected by management practices thereby serving as indicators of habitat quality. The Gallatin Forest Plan directs that habitat is provided for identified management indicator species and those native indigenous species that use special or unique habitats. Five terrestrial species are identified as MIS in the Gallatin National Forest Plan 1987:II-19 (USDA 1987). These are the grizzly bear, bald eagle, Northern goshawk, pine marten and elk. The grizzly bear, bald eagle, and goshawk are also threatened or sensitive species and will be analyzed in the biological assessment (BA and BE). Pine marten and elk are dismissed from detailed analysis.

General Effects

Pine Marten: The pine marten is an indicator for mesic old growth habitat consisting of spruce/ fir forest types. The marten is strongly associated with forested habitat. Livestock grazing is not expected to have any measurable affect on this species or its habitat. Therefore, the issue relative to livestock grazing effects on pine marten is considered irrelevant and further evaluation is not needed. Also, Cherry and Tyers (unpublished paper) indicate that population viability does not appear to be a concern. Specific to pine marten, no significant changes have occurred in patch size or habitat connectivity in mapped habitat from historic levels. In addition, there is adequate habitat on the Gallatin Forest to maintain species viability.

Elk: Elk are the MIS species designated as the indicator for big game habitat. Use of the area by elk may occur year-round depending on elevational gradients and annual climactic patterns across the landscape in relation to allotment boundaries. The Forest Plan designated elk as a MIS for big game habitat under the premise that by managing for productive elk habitat, we will be managing for most big game species. These include mountain goat, moose, bighorn sheep, and mule deer. Another Forest Plan Standard for Wildlife and Fish, (p. II-18, Section 6.a.6) includes: Allotment management plans will coordinate livestock grazing use with big game habitat needs. No potential conflicts with big game have been identified in this project area on the Fridley Creek, Lewis Creek, or Sunnybrook Allotments.

Elk numbers have been increasing throughout the analysis area and elk population goals have been met. According to results from Montana Fish, Wildlife, and Parks (MFWP) elk surveys for Hunting District 314 that includes the Fridley Creek, Lewis Creek, and Sunnybrook Allotments, the number of elk observed during the 2005

survey was the highest count since surveys began in 1974 with 4,333 elk observed with the second and third highest counts occurring in 2002 and 2003 (Lemke, office memorandum). Elk population objectives for the Gallatin/ Madison EMU (Elk Management Unit), consisting of Hunting Districts 301, 310, 311, 360, 361, 362 and 314, is to maintain a post-season population of 2,400-3,600, or 20% of 3,000 elk according to the Montana State Elk Plan (Montana Department of Fish, Wildlife, and Parks 2004).

The Statewide Hunter Harvest survey estimated a total elk harvest range of 334-653 elk per year. This information suggests there is no apparent effect of current livestock grazing operations on elk within this hunting district. Therefore, it is anticipated that the continued presence or removal of livestock would not affect elk to a measurable degree and the issue was dismissed.

D. Threatened and Endangered Species

Affected Environment

Threatened and endangered species are managed under the authority of the Federal Endangered Species Act (PL 93-205, as amended) and the National Forest Management Act (PL 94-588). Section 7 of the Endangered Species Act directs Federal departments and agencies to ensure actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of their critical habitats (16 USC 1536). Forest Service policy requires that all Forest Service programs and activities need to be reviewed for possible effects on threatened or endangered species (FSM 2672.4). In addition, the Gallatin Forest Plan identifies management standards for Threatened and Endangered Species (p. II-18, section 6.b.all.). Threatened and endangered species were addressed as part of the analysis for livestock grazing on the Fridley, Lewis, or Sunnybrook allotments.

The Fish and Wildlife Service (FWS) concurred with the Gallatin Forest Programmatic Biological Assessment for Activities that are Not Likely to Adversely Affect Listed Terrestrial Species (USFS 2004). The programmatic biological assessment was developed by the Montana Level 1 Team (Section 7 Consultation Team which includes biologists from the U.S. Fish and Wildlife Service and Montana National Forests) to facilitate consultation. Any proposed action implements a screening process to determine which proposed projects properly fit within a programmatic approach to consultation on simple, straightforward projects that would result in a 'not likely to adversely affect' determination. The screening process also provides rationale for 'no effect' projects; however, these are not subject to consultation. Not all of the project types described in the programmatic BA are eligible for this programmatic assessment since some are either ambiguous or may result in an adverse effect. If the programmatic screening concurrence process does not apply, the standard section 7 process is required. The Fridley Creek, Lewis Creek, and Sunnybrook proposed action and alternatives do fit within the

programmatic screening process and is the basis for the discussion of bald eagle, lynx, grizzly bear, and gray wolf.

Additional guidance for the management of the grizzly bear occurs in the Biological Opinion of the Effects of the Gallatin National Forest Plan on Grizzly Bears (USFWS 2004a). Agency actions must be evaluated for potential effects to grizzly bears wherever the bears are known or suspected to occur. The Fridley Creek, Lewis Creek, and Sunnybrook Allotments do not lie within the PCA for grizzly bears, but are north of the Gallatin 3 subunit of the Gallatin Bear Management Unit (BMU). However, the project area is within the area where bears occur.

Bald Eagle: The Fridley, Lewis Creek, and Sunnybrook allotment revision project area lies within the Bighorn Recovery Zone as identified in the Montana Bald Eagle Management Plan 1994 (USDI 1994), which has a target of 11 nesting pairs. The target was achieved several years ago.

The bald eagle is typically associated with large lakes (> 80 acres) and major river courses (USDI 1994). They feed primarily on fish and carrion. The project area is not within any known bald eagle nesting territory. Bald eagles are known to occur during both summer and winter along the Yellowstone, located a few miles to the east of the project area.

Gray Wolf: The Gray Wolf Recovery Plan was approved in 1987 (USFWS 1987). The plan delineated 3 recovery zones within Idaho, Montana and Wyoming. Gray wolves were reintroduced to the Greater Yellowstone Ecosystem in 1995 and 1996 as a non-essential, experimental population under the Endangered Species Act. The Livingston Ranger District is within the Greater Yellowstone Wolf Recovery Area and wolves were listed as a non-essential experimental population. Since the original animals were released in Yellowstone National Park, they have begun to spread throughout the ecosystem as expected.

Habitat is available in the Fridley, Lewis, and Sunnybrook allotments for wolves and their primary prey, elk. This area along the east flank of the Gallatin Range, which extends northward through the Trail Creek area, was part of the Lone Bear wolf pack territory. During 2005, this pack was lethally removed due to livestock depredations on private land in the Paradise Valley. However, recolonization is expected. The Mill Creek and Sheep Mountain packs are to the southeast. While there are denning and rendezvous sites for these packs across the landscape, none of these are known to occur in the project area or immediate vicinity. Overall, population objectives for the recovery of the gray wolf have been met.

Lynx: The Canada lynx was listed as a threatened species under the ESA in March 2000. The lynx is a medium sized cat associated with forested environments. Lynx require a range of habitat conditions for survival and reproduction. Forest cover is preferred for travel, resting and hunting. In general, lynx habitat on the Gallatin National Forest is defined as coniferous forest in the elevation range between 6,000 and 8,800 feet with habitat types where spruce or subalpine fir are the indicated

climax species. According to the Gallatin National Forest lynx habitat map, the Sunnybrook allotment does not have any vegetation communities that contribute to lynx habitat. This issue has been dismissed from further analysis on the Sunnybrook allotment due to the absence of lynx habitat within that allotment.

Portions of the Fridley Creek and Lewis Creek Allotments contain vegetation communities that fit the model as described above. These areas tend to be forested and therefore, not conducive to livestock grazing. Other habitat components contiguous with modeled conifer habitats include sagebrush, aspen, and willow, which are present on the Fridley or Lewis allotments. The environmental baseline for lynx is described in terms of those parameters that threaten lynx through vegetation management and alteration that may reduce available denning and foraging habitat or through human activities that may either directly or indirectly displace lynx.

Grizzly Bear: The grizzly bear is listed as a threatened species under the ESA. A grizzly bear clause was added to those livestock permits within the recovery zone in the early 1980's. The Yellowstone Grizzly Bear Recovery Zone is now referred to as the Primary Conservation Area (PCA) under the final Conservation Strategy for the Grizzly Bear in the Yellowstone Ecosystem (ICST 2003). Although the project area is greater than 10 miles from the PCA, suitable habitat exists and grizzly bears are known to use the area.

There are currently no standards in the Conservation Strategy or the Forest Plan specific to grizzly bears for management actions outside the PCA; however, grizzly bears are protected under the ESA regardless of where they occur. In the Greater Yellowstone Area, grizzly bear occurrence and reports of occurrence outside the recovery zone boundary have been increasing over time, throughout the ecosystem. The current distribution of grizzly bears on the forest includes areas outside the recovery zone.

General Effects

Bald Eagle: Livestock grazing is not expected to have any measurable effect on this species or its habitat. Per the Programmatic Biological Assessment for Activities that are Not Likely to Adversely Affect Listed Terrestrial Species (USFS 2004), use of decision screens, and concurrence letter (USFWS 2004b), there would be 'no effect' on the bald eagle. The Fridley Creek, Lewis Creek, and Sunnybrook Allotments do not lie within any bald eagle nest site management zones, do not permit structures that pose a risk to bald eagles or their prey within foraging areas, and do not increase road kills in foraging habitat. The decision screens, programmatic BA with concurrence letter, and the Consultation Summary Sheet for Programmatic Biological Assessment from the FWS are located in the Project File. Also, Cherry and Tyers (unpublished paper) indicate that population viability does not appear to be a concern. The bald eagle exceeds recovery criteria and is protected by adherence to the Montana Bald Eagle Management Plan.

Gray Wolf: Gray wolves are habitat generalists, and make use of a wide variety of habitat types throughout the course of their lives. Management emphasis for gray wolves is directed at maintaining sustainable populations of wolf prey species, primarily ungulates. Livestock grazing is not expected to have any measurable effect on elk or its habitat. The elk population within the project area and hunting district is at the highest ever recorded. Elk habitat within the project area and surrounding landscape would still be available to elk on National Forest and adjacent private land. Other key ungulate habitat components including cover, security areas, and road densities would remain unchanged with the proposed action or any of the alternatives.

The decision screen and the programmatic BA (USFS 2004) do not apply to the non-essential experimental population within the project area. However, the recent final rule published in the Federal Register defines new regulations for nonessential experimental populations of the western distinct population segment of the gray wolf (USFWS 2005). This rule retains some regulation of human-caused wolf mortality (i.e. no public hunting or trapping is allowed) but it does allow for non-injurious harassment of wolves and take of wolves on both private and public lands. According to the Endangered Species Act of 1973, the definition of ‘take’ means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Only permittees with a current Federal land use permit that requires livestock use may take wolves on public land and only when they are “in the act of” attacking those permitted livestock. This rule was issued to provide additional flexibility within the experimental population areas in recognition of the fact that wolves are numerous in the experimental population areas (USFWS 2005). Such taking of wolves must be reported within 24 hours and physical evidence of an attack by wolves on livestock must be evident. Grazing allotment permits were modified to include the current language regarding wolf management on livestock allotments including appropriate contact information (Rock, verbal communication).

The Animal and Plant Health Inspection Service (APHIS) Wildlife Services (WS), and the Forest Service have a signed Memorandum of Understanding (MOU) to identify responsibilities and establish guidelines for the management of wild vertebrates causing damage on National Forest System lands. According to the Annual Wildlife Damage Management Plan (APHIS-WS 2004), Wildlife Services (WS) personnel trapped, radio collared, and freed two wolves on Gallatin National Forest lands due to livestock depredation on permitted livestock allotments. One grizzly bear was caught and relocated due to depredation on permitted livestock [sheep] allotments. In addition, for the period of October 2003 and September 2004 (basically the 2004 grazing season), 7 wolves were killed and 8 were surveyed on the Gallatin National Forest. These control actions did not occur near the project area. Other predators (coyotes, black bear, and mountain lion) may have been removed if requested from the livestock permittee. Cherry and Tyers (unpublished paper) indicate that population viability does not appear to be a concern. The gray wolf has reached recovery criteria and is being considered for delisting.

Lynx: According to the LCAS, livestock may reduce forage resources available to snowshoe hares and other prey species in these habitats if it alters the structure or composition of native plant communities (Ruediger and others 2000). Grazing throughout the Rocky Mountains has contributed to the decline of aspen, which as a well-developed young stand provides quality habitat for snowshoe hares and other lynx prey items (Ruediger and others 2000). Grazing has also degraded high elevation willow communities, another component of snowshoe hare habitat.

Livestock grazing is also addressed in the programmatic biological assessment (USFWS 2004b). Proposals that include livestock grazing must follow screening criteria as identified in the LCAS and programmatic BA Table D1 to receive a determination of “not likely to adversely affect” lynx. These project planning standards direct management of livestock grazing to: 1) ensure aspen sprouting and survival sufficient to perpetuate long-term viability of the clones, 2) maintain or achieve mid-seral or higher condition shrub-steppe to provide lynx habitat matrix, and 3) maintain or achieve mid-seral or higher condition riparian areas or willow carrs to provide cover and forage for prey species. Issues relative to livestock grazing effects on the lynx may be eliminated due to effective mitigation or through the adaptive management strategy. The decision screens, programmatic BA with concurrence letter, and the Consultation Summary Sheet for Programmatic Biological Assessment from the FWS are located in the project file. Also, Cherry and Tyers (unpublished paper) indicate that population viability does not appear to be a concern. In addition, the Forest Service is adhering to direction in the Lynx Conservation Assessment and Strategy (Ruediger 2000).

Grizzly Bear: Livestock grazing that occurs outside the PCA but within the distribution area of grizzly bears must follow screening criteria as identified in the programmatic BA Grizzly Bear Screening Process Part 2. Grizzly bear issues related to livestock grazing generally involve depredation of livestock by grizzly bears, disposal of livestock carcasses, storage of human food and stock feed, and grizzly bear habituation, food conditioning and mortality risk associated with these activities. According to the FWS Biological Opinion (2004a), and based on the Forest's project-level consultations over the past two decades, access management, sanitation/ food storage, and livestock grazing are the three program areas responsible for most, if not all, of the adverse effects and incidental take of grizzly bears occurring on the Forest. However, the majority of the depredation was on sheep; there has not been any recent history of grizzly bear depredation upon cattle or horses on the Forest. No livestock related grizzly bear mortalities occurred within the project area through 2005. Grizzly bears are likely to feed on dead livestock that died for other reasons.

The programmatic biological assessment and use of decision screens (USFWS 2004b) for grazing activities applies to the Fridley, Lewis, and Sunnybrook allotment plan revision project. According to the grizzly bear project screening elements, livestock grazing may be maintained or reduced from existing levels if no depredation has taken place historically. In addition to the programmatic biological assessment, the

recent Biological Opinion (USFWS 2004a) contains a section on Terms and Conditions Reporting Requirements that is applicable to livestock grazing. It is a statement specific to livestock depredation and has been included in the mitigation section.

There is no history of livestock depredation or control actions on the Fridley, Lewis, or Sunnybrook allotments. Livestock grazing would not increase or be grazing in new areas. The decision screens, programmatic BA with concurrence letter, Biological Opinion, and the Consultation Summary Sheet for Programmatic Biological Assessment from the FWS are located in the project file. Also, Cherry and Tyers (unpublished paper) indicate that population viability does not appear to be a concern. The grizzly bear is protected by adherence to the constraints stipulated in the Grizzly Bear Conservation Strategy (Schwartz and Haroldson 2003).

E. Sensitive Species

Affected Environment

Sensitive species are those animal species identified by a Regional Forester for which population viability is a concern as evidenced by a significant current or predicted downward trend in population numbers, density, or in habitat capability that will reduce species' existing distribution (FSM 2670.5.19). Protection of sensitive species and their habitats is a response to the mandate of the National Forest Management Act (NFMA) to maintain viable populations of all native and desired non-native vertebrate species (36 CFR 219.19). The sensitive species program is intended to be pro-active by identifying potentially vulnerable species and taking positive action to prevent declines that will result in listing under the Endangered Species Act. Forest Service Manuals (FSM 2670) provide policy under which Forest Service projects are designed to maintain viable populations of sensitive species and to ensure that those species do not become threatened or endangered due to Forest Service actions.

As part of the National Environmental Policy Act (NEPA) decision-making process, proposed Forest Service programs or activities are to be reviewed to determine how an action would affect any sensitive species (FSM 2670.32). The goal of the analysis should be to avoid or minimize impacts to sensitive species. If impacts cannot be avoided, the degree of potential adverse effects on the population or its habitat within the project area and on the species as a whole needs to be assessed.

In addition, Gallatin Forest Plan Standard for Wildlife and Fish, (p. II-18, section 6.a.12) includes: Habitat that is essential for species identified in the Sensitive species list developed for the Northern Region will be managed to maintain these species. Sensitive species were addressed as part of the analysis for livestock grazing on the Fridley Creek, Lewis Creek, or Sunnybrook allotments. All of the species were dismissed or eliminated from detailed analysis. The project area does not provide suitable habitat, or will not effect to any measurable degree, habitat for the peregrine falcon, trumpeter swan, harlequin duck, flammulated owl, wolverine, goshawk, black-backed woodpecker or

Townsend's big-eared bat so these species only briefly addressed in this analysis for potential impacts from the proposed project.

Fish species listed as 'sensitive' on the GNF include Arctic grayling (*Thymallus arcticus*), westslope cutthroat trout (*Oncorhynchus clarki lewisi*), and Yellowstone cutthroat trout (*O. clarki bouvieri*). Of these species, Arctic grayling and westslope cutthroat trout are not native to the Yellowstone River drainage. Streams throughout the project area are within historically occupied habitat for Yellowstone cutthroat trout. Yellowstone cutthroat trout surveys have been conducted in all streams throughout the project area (see Affected Environment narrative), and Fridley Creek is the only stream that supports genetically pure YCT.

There are two GNF sensitive amphibians, the northern leopard frog (*Rana pipiens*) and the Boreal (Western) toad (*Bufo boreas*). Northern leopard frogs breed from mid-March to early June (Maxell 2000). Mating occurs when males congregate in shallow water and begin calling during the day (Maxell 2000). Eggs are laid at the water surface in large, globular masses of 150 to 500 (Maxell 2000). Young and adult frogs often disperse into marsh and forest habitats, but are not usually found far from open water (Maxell 2000). Overwintering habitat is the bottom of permanent water bodies, under rubble in streams, or in underground crevices. During a Gallatin National Forest survey in 1999, Northern Leopard frogs were found only on the Bozeman Ranger District with a second potential sighting on the Gardiner Ranger District. None have been found in the Big Creek drainage or elsewhere throughout the project area, but additional surveys are necessary to validate their distributional range and presumed absence from the project area. Suitable habitat exists throughout the project area.

Boreal toads inhabit all types of aquatic habitats ranging from sea level to 12,000 in elevation (Maxell 2000). They breed in lakes, ponds, and slow streams, preferring shallow areas with mud bottoms (Maxell 2000). Western toads breed from May to July, laying long, clear double-strings of eggs (Maxell 2000). Tadpoles metamorphose in 40 to 70 days (Maxell 2000). Because of their narrow environmental tolerance (10-25 C throughout the year), adults must utilize thermally buffered microhabitats during the day, and can be found under logs or in rodent burrows (Maxell 2000). Adults are active at night and can be found foraging for insects in warm, low-lying areas (Maxell 2000). boreal toads overwinter in rodent burrows and underground caverns. . Boreal toads have not been found on the east side of the Gallatin range (Atkinson and Peterson 2000), with no observations in the project area. Suitable habitat exists throughout the project area, but additional surveys are needed to validate their distributional range and presumed absence from the project area.

General Effects

Peregrine Falcon: Peregrine falcon nest sites exist in Paradise Valley but are not known to be within the project area. Any cliffs used for potential eyries would not be considered suitable grazing land and no effects are anticipated. Foraging habitat would be maintained or improved through proposed livestock grazing practices. Any

indirect effects would be immeasurable. There are no existing eyries or foraging areas in the project area. Therefore, the proposed grazing allotment revision would have “no impact” on the peregrine falcon. Also, Cherry and Tyers (unpublished paper) indicate that population viability does not appear to be a concern.

Trumpeter Swan: Trumpeter swan would not be affected because suitable habitat does not exist in the area. For this reason, it is determined that livestock grazing will have “no impact” on trumpeter swan.

Harlequin Duck: Harlequin duck inhabits swift streams, which do not occur on any of the allotments. The streams within the project area are very small and are not typical of their preferred habitat. Therefore, the proposed grazing allotment revision would have “no impact” on the harlequin duck.

Flammulated Owl: Associated with seral and climax late-successional forests, these owls are a secondary cavity nester which feeds almost exclusively on insects. They have been observed in a variety of habitats but seem to prefer mature, open-grown stands of ponderosa pine and Douglas fir. To date, no occurrences have been documented within the project area. Flammulated owls are strongly associated with open ponderosa pine habitat, which does not occur within or near the allotments. However, aspen and dry open Douglas-fir habitats are present on the allotments and may also be used by flammulated owls. Because they are a cavity nester, there would be no direct or indirect effects on nesting. Forest/grassland edges are preferred foraging. There is a very small risk of change in the prey base by altering grassland habitat where prey may be located. Livestock could have minor indirect effects through changes in vegetative composition that may alter the availability of prey species. However, these vegetation communities are currently in good condition. Implementation of proper livestock levels, management actions such as deferment, and all the adaptive management strategies would maintain or improve flammulated owl habitat. For this reason, it is determined that livestock grazing “May impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species”. For the Fridley Creek, Lewis Creek, and Sunnybrook Allotment analysis, the flammulated owl is *eliminated from further study due to monitoring of the Forest Plan standards and guidelines for grazing utilization*.

Wolverine: Wolverines are medium sized forest carnivores thought to be secretive and to stay in forest cover as much as possible. During summer wolverines are associated with high elevation and alpine areas. During the winter they occupy areas where prey is available. Generally speaking, wolverines are opportunistic omnivores in summer and primarily scavengers in winter. Since wolverines are basically habitat generalists with an opportunistic foraging strategy, it can be assumed that any of the allotments may provide habitat for wolverine. Both direct and indirect effects of livestock grazing would be expected. The actions proposed such as enlarging water source enclosures, implementation of riparian utilization guidelines, and a deferment system would improve riparian and upland conditions, thus improving foraging

opportunities for wolverine prey. For this reason, it is determined that livestock grazing “*May impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species*”. Also, Cherry and Tyers (unpublished paper) indicate that population viability does not appear to be a concern. The main issue with the wolverine is snowmobile activity, which is not being addressed in this analysis.

Goshawk: The goshawk is an indicator for old growth habitat consisting of dry Douglas fir forest types. Livestock are not expected to affect goshawk nesting habitat as goshawk primarily nest in mature conifer forests. Goshawks forage in a variety of open and forested communities and prey on small mammals and birds. These are habitats that seldom produce much forage and are considered unsuitable for livestock grazing. Livestock could slightly alter grassland habitat where prey may be located. Under current management, livestock are not impacting dry Douglas fir mature or old growth forest to any measurable degree. Implementation of livestock grazing, including all the actions identified in the adaptive management strategy, would maintain or improve goshawk habitat. For this reason, it is determined that livestock grazing “*May impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species*”. Also, Cherry and Tyers (unpublished paper) indicate that population viability does not appear to be a concern. An analysis of goshawk nesting habitat revealed abundant potential habitat on the Gallatin Forest.

Black-backed Woodpecker: Black-backed woodpeckers are primary cavity nesters and prefer burned or dead forest with numerous snags containing wood boring insects. There is available habitat within the project area. However, the habitats they use are not considered suitable for grazing and are not likely to be impacted by grazing. Therefore, the proposed grazing allotment revision would have “*no impact*” on the black-backed woodpecker. Also, Cherry and Tyers (unpublished paper) indicate that population viability does not appear to be a concern. The black-backed woodpecker appears to be using newly available habitat created in recent years through significant fire events.

Townsend’s Big-eared Bat: Big-eared bats forage for insects at night, often in and above open-grown mature forests. They are very sensitive to human disruption of roosts and hibernacula. Limestone cliffs and rock outcrops may provide roosting and hibernating habitats although these are not known to occur on any of the allotments. Individuals may also roost in snags and old trees. If the Townsend’s big-eared bat does occur in the project area, livestock grazing would have no direct effect on their habitat. There may be some slight indirect effects of livestock grazing on their prey base, particularly at water sources. Implementation of grazing standards and adaptive management strategies would improve watershed function and riparian vegetation structure, which would increase foraging habitat. For this reason, it is determined that livestock grazing “*May impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or*

species". Also, Cherry and Tyers (unpublished paper) indicate that population viability does not appear to be a concern.

Yellowstone cutthroat trout: Based on my effects analysis, I have reached the following determinations for Yellowstone cutthroat trout. For all alternatives, the project would have *no impact* on YCT. A detailed rationale for this determination is included in the effects analysis of this report located in the project file. YCT habitat and populations in Fridley Creek are currently not being affected by grazing.

Boreal Toad and Northern Leopard Frog: Under existing grazing management (Alternative 2), habitat degradation for both amphibian species may be occurring at springs, seeps, and riparian corridors that are currently being affected by grazing. Surveys for both species suggest that they are not present, however, it is not certain whether any of the suitable habitat is occupied. Thus, grazing under Alternative 2 *may impact individuals, but is not likely to cause a trend to Federal listing or loss of viability*. For Alternatives 1 (no grazing) and 2 (adaptive management), riparian health is anticipated to improve. As such, it is reasonable to assume that habitat conditions for amphibians will improve. Even though northern leopard frogs and boreal toads are not known to occupy suitable habitat, if habitat conditions improve, then there is potential for a *beneficial effect* with these two alternatives.

F. Biodiversity

Affected Environment

Variability in the frequency, intensity, and spatial pattern of most major disturbance processes is needed to maintain biodiversity. Grazing could affect the successional state of the vegetation, composition of plants in the area, structure of plants, and stability of the system.

General Effects

Livestock grazing has affected both upland and riparian vegetation in localized areas throughout the allotment, but it is very unlikely that these effects have had measurable effects upon the diversity of wildlife due to their limited extent and magnitude. Nothing proposed in the action alternatives would be expected to alter conditions substantially enough to measurably affect wildlife diversity at the landscape scale. Therefore, this issue was eliminated due to minor effect.

G. Biological Corridors

Affected Environment

An issue regarding the potential effects of livestock grazing on wildlife corridors and movement was identified during public scoping. The primary mechanisms for these effects would be through alteration of vegetation by grazing, salting practices, and fence and water development location.

General Effects

Livestock grazing under the action alternatives will not prohibit the movement of wildlife or cause fragmentation of their habitat. Livestock grazing has minimal potential to fragment habitat or impede movement corridors by altering vegetation patterns. Livestock grazing will have no impact on motorized route density or hiding cover for the species of concern. Livestock grazing would not limit the ability of any of the wildlife species of interest from moving through this area under the action alternatives. No wildlife species would become isolated from other populations, would be prevented from accessing important habitat, or would have their distribution affected under any alternative. Potential disruption of wildlife movement would be addressed by installing wide gates at appropriate locations to allow wildlife passage when livestock are not present, using construction techniques that are wildlife friendly (wood vs. wire or adjusting wire spacing), and removing any fence that is no longer needed for allotment management. This issue was eliminated due to minor effect.

H. Beaver

Affected Environment

Heavy livestock grazing in riparian areas can lead to reduced availability of vegetation that is essential habitat components for beavers. Trampling and browsing are primary mechanisms by which cattle can affect beaver forage, which is mainly willow.

General Effects

Forest Plan standards have been effective in maintaining habitat for beaver, where potential for beaver exist. These standards would continue to be met under all action alternatives where grazing would be authorized, and implementation of the Beaverhead-Deerlodge Guidelines under the adaptive management alternative would offer additional assurance that adequate beaver habitat would be maintained. Therefore, this issue can be eliminated due to minor effect and effective mitigation.

I. Sensitive Plants

Affected Environment

The issue is the potential effect of livestock grazing on sensitive plants that may occur on the allotments. Sensitive plant species that have a moderate vulnerability to grazing include: *Gentianopsis simplex*, *Juncus hallii*, *Salix barrattiana*, and *Eriophorum gracile*. Only one occurrence is documented for *Eriophorum gracile* and *Gentianopsis simplex* (Madison County and the Bridger Mountains respectively) on the Gallatin Forest. No occurrences of *Juncus hallii* or *Salix barrattiana* exist for the Gallatin Forest. If these plants did occur within the project area, livestock grazing may impact these sensitive species.

General Effects

The Sunnybrook and Lewis allotments were surveyed in 1997 at which time no sensitive plants were located. Based on these surveys and the similar repeating vegetation communities across the landscape, it is unlikely any sensitive species exist on the nearby Fridley allotment. There will be “no impact” to sensitive plants within the treatment areas due to lack of potential suitable habitat and/or absence of plants based on completed surveys. Although highly unlikely, if any sensitive plants are located in the project area in the future, they would be protected. The issue was dismissed due to effective mitigation. The BE for sensitive plants is located in the project file.

J. Conifer Regeneration

Affected Environment

The issue is the potential effect of proposed livestock grazing on conifer regeneration through trampling and browsing.

General Effects

There are no recent or proposed timber harvest activities scheduled for the project area. Past logging cutting units are regenerated with trees that can withstand livestock use within the stand. Regenerated trees are tall enough that livestock use is precluded to a large extent. Therefore, the issue is dismissed as being irrelevant to livestock grazing.

K. Research Natural Areas

Affected Environment

An issue regarding the potential for domestic livestock grazing to impact undisturbed areas, potentially affecting Research Natural Areas (RNAs) was raised during public scoping.

Direct/Indirect/Cumulative Effects

There are no new areas proposed for livestock grazing in any of the action alternatives. There are no designated RNAs within the project area. Therefore, the issue is dismissed as being irrelevant to livestock grazing.

L. Open Road Density

Affected Environment

There was a concern about the open road density in the project area.

General Effects

There are no new roads, temporary roads, road reconstruction, or any other proposal associated with roads in this analysis. Livestock grazing is not the cause of open road density levels. Therefore, the issue was dismissed as irrelevant to the proposed action.

M. Recreation

Affected Environment

Fridley Allotment

Recreational uses and facilities within the Fridley Allotment are minimal due to lack of public access in the drainage. System trails crossing the allotment include the Pole Gulch Trail #182 and the Fridley Lakes Trail #240. One interior fence crosses the Fridley Lakes Trail in the southwest corner of section 26.

Lewis Allotment

One system trail, Lewis Creek Trail #181, follows Lewis Creek along the southwest border of the allotment. Utilization of this portion of the allotment by cattle is very low. No improvements, fences or water tanks, are located near the trail.

Sunnybrook Allotment

This allotment comprises Forest Service Lands and Mountain Sky Guest Ranch lands. The ranch also has an outfitter and guide permit with the Livingston Ranger District. Lewis Creek Trail #181 forms the west boundary of the allotment. All other trails within the allotment are either on private land or are part of the outfitter and guide permit. In 1995, a recreational residence permittee complained that horses were “trailing” across her access road. During wet weather she was not able to access her residence. An agreement was made with Mountain Sky Guest Ranch to build a two-pole fence to direct the flow of horses. Currently the horses cross at a single point on the road. This crossing is part of an approved trail in Mountain Sky Guest Ranch’s outfitter and guide permit. A log has been installed to anchor the fill slope of the road from erosion from the horse crossing. There are no water tanks or fences on the allotment.

Proposed Dry Creek Allotment

Recreational uses and facilities within the proposed Dry Creek Allotment are minimal due to lack of public access in the drainage. System trails crossing the allotment include the Pole Gulch Trail #182 and the Mill Fork of Hyalite Trail #190. One private fence crosses the Pole Gulch Trail # 182.

General Effects

Alternative 1-No Action: The removal of grazing from these allotments would have no negative effects on the recreational uses and facilities in this area.

Alternative 2-Current Management: The current grazing on the Fridley Allotment and Lewis Allotment has had no negative effects on recreational uses and facilities. Also no concerns have been raised relative to recreational users impacting livestock grazing such as moving or disturbing cattle. The horses on the Sunnybrook allotment have had negative impacts on the road accessing a recreational cabin. Measures were taken in 1995 to remedy the situation. A single trail now crosses the road.

Alternative 3-Adaptive Management: This alternative proposes the potential for several new developments. The proposed Fridley Creek Allotment developments and aspen treatment activities (felling of conifers, mechanical disturbance of the root system, or controlled burning immediately within the aspen treatment area) would not concentrate livestock use along trails. The tree felling proposals and construction of a new trough would not concentrate livestock use along trails. Thus Alternative 3 will have no impact on recreational facilities. Also, since these new facilities and pasture rotations are not influenced by the presence of a trail there is little possibility of the recreating public disturbing pasture rotations (moving cattle out of areas they should be in). Any potential new fences, which bisect trails, should include gates for foot and horse users.

Past Effects: Historical timber harvesting has occurred in Eight-mile Creek, Pole Gulch, Miller Creek, and parts of Fridley Creek. The Pole Gulch timber sale, primarily completed in 2002, was the most recent logging in the area, which included parts of Pole Gulch, Eight mile Creek, and Miller Creek. The 26,373 acre Fridley Fire in 2001 burned about 2000 acres in headwater watershed area of the allotments including about 700 acres in Miller Creek and 930 acres in Fridley Creek. Neither the timber sales nor the Fridley Fire significantly impacted recreational activities in this area.

Present and Future Effects: There are no active timber sales or land exchanges proposed for this area. The ongoing Paradise Acres Fuel Reduction Project has not had and is not projected to have any effect on recreational use of the project area. The Gallatin National Forest Travel plan does not propose significant changes to the recreational use patterns in this area. None of the proposed alternatives will have any

direct, indirect, or cumulative effects on recreational opportunities within the project area.

N. Heritage Resources

Affected Environment

Fridley Creek, Lewis Creek, Sunnybrook, and Dry Creek Allotments

These allotments are in the steep, timbered transitional zone between the low elevation foothills and the high elevation sub-alpine and alpine zones, both of which are rich in historical and pre-historical sites.

Previously Identified Heritage Resources –

There is only one prehistoric site recorded within and 3 additional prehistoric sites within 1 mile of these allotments.

Archeological Surveys –

Approximately 7 cultural resource surveys have been completed for various ground disturbing projects in the study area. Additional sample surveys in high site potential areas were conducted 6/3/04 and 8/10-11/04 in preparation for this review.

Environmental Consequences

The following Effects Indicators were used to focus the heritage analysis and disclose relevant environmental effects:

- A qualitative assessment of effects to heritage resources
- Heritage resource inventories are required by the Forest Plan prior to all ground disturbing projects in order to locate and identify historic or Native American sites or artifacts. Once sites or artifacts are identified in a project area, protective measures are carried out which would ensure preservation of the values associated with the sites are protected.
- Heritage resources can be diminished in value by any change in their historical, architectural, heritage or archaeological character. Adverse impacts to heritage resource sites can result in damage or complete destruction of the sites, effects of this damage may be irreversible. Adherence to the regulation for implementing the National Historic Preservation Act insures that significant heritage resources are identified prior to project implementation and that project effects are identified and either avoided through project redesign or moderated. Site significance and project effects are determined through consultation with the

MTSHPO and tribes. A scoping letter was sent to the Crow Tribe regarding the project. No comments were received from the tribe.

General Effects

The paucity of sites in these allotments suggests that the potential for effects to cultural resources is remote. There are no sites identified in the proposed aspen treatment area within the Fridley Creek Allotment, where some localized ground disturbance and controlled burning could occur with implementation of the Adaptive Management Alternative. There have been no sites identified in the portion of Section 12 of the Lewis Creek Allotment where the ongoing Paradise Acres Fuel Reduction slashing and low-intensity underburning is scheduled to occur. There is no indication of impacts to the single site in the allotments (although it is a difficult location to get to beyond where stock appears to frequent). If any additional sites are located, appropriate measures would be taken to protect them.

Cumulative effects could be an issue if some direct or indirect effects had been recognized (such as trailing through a site or increased use leading some erosive action at a site, etc) and there were no plans to address the problem. However, these kinds of problems have not been recognized at the site in these allotments.

O. Socio-economics

Affected Environment

Livestock grazing can impact local and regional economies, government receipts and expenses, and permittee income. It is, therefore, Forest Service policy to consider the economic efficiency and impacts of proposed actions (FSM 1970.3). Indicators for economics are:

- Present Net Value
- Benefit/Cost Ratio

Cost Analysis

Range Permit Administration

Permit Administration per day:	
District Ranger	\$353.49
Rangeland Management Specialist	\$237.72
Resource Assistant	\$301.40
Monitoring/Inventory per day:	
Fisheries Biologist	\$322.62
Wildlife Biologist	\$301.40

Rangeland Management Specialist \$237.72
 GS-3 Range Tech \$92.73
 GS-4 Range Tech \$105

Vehicles:

\$205/month; \$6.83/day; \$.27/mile
 \$192/month; \$6.40/day; \$.27/mile

Weed Crew:

Table A-13 displays the costs by alternative for a weed crew to treat invasive species within the allotments

Table A-13 Weed Crew Costs By Alternative

Alternative	Days	Rate*	Vehicle rate**	Total Cost
1	3	198	47.76	648.84
2	5	198	78.20	1081.40
3	4	198	62.56	865.12

***Labor Rate** = \$92.73/day (GS-3) + \$105/day (GS-4) = \$198/day

***Vehicle Rate:**

Alt 1 – (3 days * \$198) + (3 days * \$6.40/day) + (3 days * (44 miles/day @ .27/mile)
 Alt 2 - (5 days * \$198) + (5 days * \$6.40/day) + (5 days * (44 miles/day @ .27/mile)
 Alt 3 - (4 days * \$198) + (4 days * \$6.40/day) + (4 days * (44 miles/day @ .27/mile)

Fencing Costs:

Fence Construction: \$3,400/mile
 Fence Maintenance: \$200/mile

Benefit Analysis

Grazing Fee Collections:

Table A-14 displays the amounts collected in grazing fees by alternative.

Table A-14 Grazing Fee Collections

Alternative	Allotment	Head Months	Fees*	Total
1	N/A	N/A	N/A	N/A
2	Fridley North	266	\$1.79	476.14
	Fridley South	107	\$1.79	191.53
	Lewis Creek**	78	\$1.79	139.62
	Sunnybrook	18	\$1.79	32.22
Total		391		699.89
3	Fridley Creek	311	\$1.79	556.69
	Lewis Creek	100	\$1.79	179.00
	Sunnybrook	18	\$1.79	32.22
	Dry Creek	74	\$1.79	132.46
Total		503		900.37

*Fees – Are based on current years fees \$1.79

*The totals do not include Lewis Creek since it has been vacant for the past two years

General Effects

It is not anticipated there would be significant direct local economic effects regardless of the alternative. There may be some minor indirect economic effects. Grazing is an approved use under the current Gallatin National Forest Plan (GFP-III, 36 CFR 222.1). Therefore the economic viability of livestock grazing on public lands is not evaluated in this analysis. Grazing fee levels or changes in the way fees are collected are not evaluated. Costs to permittees (range riders, fencing labor, and water tank installment), are not included in this analysis. These issues are beyond the scope of the analysis.

Table A-15 displays a comparison of present net value and benefit cost ratios for each alternative. Costs included in the analysis include such things as construction and maintenance of fences, administration of the allotment by Forest Service, the cost of materials for improvements, noxious weed management, etc. Benefits include grazing receipts. No attempt was made to try and quantify recreational user days, or to put economic values on wildlife, etc. Values indicated in Table A-15 for Alternative 1 are negative because the cost of allotment inspections and weed treatments. Alternatives 2 and 3 are negative because of the low amount of grazing receipts collected by the Forest Service.

Table A-15 – Estimate of Present Net Value and Benefit Cost Ratio.

Indicator	Alternative 1	Alternative 2	Alternative 3
Present Net Value*	-\$15, 579.81	-\$15, 477.14	-\$75, 576.37
Benefit/Cost Ratio	0	0.31	0.09
Net Annual Equivalent	-\$2, 095.37	-\$2, 081.57	-\$10, 164.49

*Note – Present Net Values are for a ten-year period.

Past

Livestock grazing played an integral role in development of the State of Montana and its economy over the past one hundred plus years. Over the past several years the economics of grazing livestock on public lands has come under increasing scrutiny and criticism.

Present

Currently, Lewis Creek is the only allotment that the grazing fees are not being collected from. It has been vacant for the past few years; all other allotments are active. There are two outfitters within the analysis area that are permitted to operate. The analysis area consists of some private land, which limits the use from recreationists.

Future

The livestock industry is expected to continue to play an important role in the local economy of Park County. There are no foreseeable changes in the Federal grazing fee structure in the near future. Current trends in Gallatin County (west of Park County) include a shift from agricultural to other industries as more diverse businesses become established. This may have an adverse affect on the livestock industry in Park County.

Cumulative Effects

As the economies within communities in the state are changing with the growth of new industries, livestock are playing a smaller role in employment and income. Selection of Alternative 1 (No Action/No Grazing) would reduce the acreage in the Fridley Allotment. The permittees within the analysis area would likely have to reduce the number of livestock. Reducing numbers could reduce the viability of the operations but it is not known at this point whether it would cause the permittees a financial hardship or cause them to cease operation.

Overall, selection of any of the alternatives would not create much of an effect on the local economy. However, there may be some incremental cumulative loss to the livestock industry as a whole if one of the permittees was not able to continue their operation under the No Action/No Grazing Alternative. On a larger scale throughout the state, as more and more livestock operations become uneconomical there is expected to be a continued reduction in this segment of the state’s economy.